Fact Sheet

California Environmental Protection Agency
Air Resources Board

Proposed Airborne Toxic Control Measure for Composite Wood Products

Why is ARB focusing on composite wood products?

The Air Resources Board (ARB) staff is proposing an airborne toxic control measure (ATCM) to limit formaldehyde emissions from composite wood panels (i.e., hardwood plywood, particleboard, and medium density fiberboard) and composite wood used in finished goods, such as furniture and kitchen cabinets. Composite wood products contain formaldehyde, which is a known human carcinogen. Formaldehyde is also designated as a toxic air contaminant (TAC) in California with no safe level of exposure, and state law requires ARB to take action to reduce human exposure to TACs. In addition, formaldehyde has non-cancer effects, such as eye, nose, and respiratory irritation. Formaldehyde exposure has also been linked to the exacerbation of asthma in formaldehyde-sensitive individuals, and possibly other asthmatics. Formaldehyde is emitted from composite wood products into the air from new home construction; remodeling construction; truck, rail, and ship transportation; lumberyards; and through windows, doors, and ventilation systems in homes and other buildings.

Why are new formaldehyde emission standards being proposed?

The composite wood panel manufacturing industry plays an important role in recycling wood waste and diverting waste from landfills. However, the industry's environmental stewardship should not end with forest sustainability; it should also extend to the public health effects associated with the use of composite wood panels. Currently, there are actions that have been taken in Europe and Japan to significantly reduce formaldehyde exposure from composite wood panels. While the U.S. Department of Housing and Urban Development (HUD) established formaldehyde emission limits for hardwood plywood and particleboard in 1985, in comparison to Europe and Japan, these limits are not nearly as health-protective and only apply to use of hardwood plywood and particleboard in manufactured homes. HUD did not establish a formaldehyde emission limit for medium density fiberboard.

Are technologies available to produce low or no added formaldehyde emitting products?

In our comprehensive evaluation of composite wood manufacturing technology, we have determined that the proposed ATCM is technologically feasible. In order to allow the industry to meet the proposed emission limits, we are proposing to phase-in the new requirements over the next six years. In 2008, the Phase 1 standards would become effective, while the technology-forcing Phase 2 standards would take effect in the 2010-2012 timeframe. Several technologies already exist to meet the increasingly health-protective formaldehyde levels we have proposed for Phases 1 and 2. Some of these technologies are innovative urea-formaldehyde resins, which are price competitive, and could be readily used by U.S. manufacturers to meet the Phase 2 standard. Other new, novel technologies include soy resins, which have no added formaldehyde. The list of domestically produced, competitively priced, ultra-low formaldehyde composite wood panel products meeting the proposed Phase 2 standards continues to grow, and currently includes products made by Hambro Forest Products, Columbia Forest Products, Roseburg Forest Products, and SierraPine Ltd.

Will the cost of composite wood panels increase?

Our preliminary cost estimates indicate that the incremental manufacturing cost to meet the proposed Phase 1 standards for particleboard, medium density fiberboard, and hardwood plywood will be four percent, four percent, and ten percent respectively. The cost of the proposed Phase 2 standards in 2010 for particleboard and 2012 for medium density fiberboard could be about 30 percent higher than today's cost. We estimate that a 4-foot by 8-foot panel of particleboard could increase in price from a current average of about $7.00 per panel to about $9.00. Furthermore, both SierraPine's "Arreis™" medium

density fiberboard and Columbia Forest Product's "Purebond™" hardwood plywood are advertised as being cost-comparitive and having no added formaldehyde.

Will there be shortages in the supply of composite wood panels?

With respect to composite wood panel availability, we do not anticipate any supply shortages with this proposed ATCM. We are working with industry to determine how much time is necessary to ensure a sufficient and timely supply of compliant composite wood panels to downstream customers.

How will this proposed control measure be enforced?

Concerns have also been expressed about enforcement of this ATCM. We understand that an effective enforcement program is critical to ensure that California businesses are able to compete on par with foreign countries that export products to California. In this regard, it is important to note that in today's market, U.S. companies are presently at a competitive disadvantage, since there is no enforcement of the existing national formaldehyde emission limits for hardwood plywood and particleboard used anywhere except in manufactured homes. The proposed ATCM would change the status quo by requiring enforcement of the Phase 1 and 2 standards on both imports and domestic products of hardwood plywood, particleboard, and medium density fiberboard. We are developing a comprehensive enforcement program so that we can monitor the formaldehyde emissions of panels offered for sale in California, and to determine if compliant panels are being used in finished products such as furniture. The enforcement program for the proposed ATCM will include a rigorous third party certification process for composite wood panel producers, and a chain-of-custody program to demonstrate downstream compliance. A screening tool for confirmatory testing of formaldehyde levels in composite wood panels and finished goods is also under evaluation.

What reductions on formaldehyde emissions will this proposed control measure achieve?

Our preliminary estimate of total statewide formaldehyde emissions from composite wood products is 400 tons per year; the major portion coming from new hardwood plywood, particleboard, and medium density fiberboard panels. The proposed Phase 1 standards are projected to achieve about a 30 percent reduction in emissions from hardwood plywood, particleboard, and medium density fiberboard relative to current levels. The proposed Phase 2 standards are projected to achieve about an 80 percent reduction relative to current levels.

What is the status of the ATCM?

This proposed ATCM is being developed after four years of research and numerous meetings and discussions with the composite wood products industry and other stakeholders. A second preliminary draft of the proposed ATCM was released for public review on June 20, 2006. More information can be found at: http://www.arb.ca.gov/toxics/compwood/compwood.htm.

For more information

Visit our web site at http://www.arb.ca.gov/toxics/toxics.htm for more information on formaldehyde or call the ARB's Public Information Office at (916) 322-2990. For individuals with sensory disabilities, this document is available in Braille, large print, audio cassette or computer disk. Please contact ARB's Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please contact ARB's Bilingual Manager at (916) 323-7053.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our web site: www.arb.ca.gov.